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Labor Mobility

An Investment in Human Capital Approach

Athenas P. Kottis

The paper presents an explanation of the economic factors behind the geographic, occupational and industrial mobility of labor by considering movement from one area, occupation, or industry to another as an investment in human capital, requiring the incurrence of a certain cost and making possible certain returns, which are subject to various degrees of risk and uncertainty. It shows that both the traditional neoclassical theory and the institutional models present an incomplete picture of the factors affecting the mobility of labor and concludes that the factors deemed relevant by both theories are equally important in explaining the mobility of labor.

The purpose of this paper is to present an explanation of the economic factors behind the geographic, occupational, and industrial mobility of labor. In this regard there has been a vigorous dispute in the existing labor economics literature between the supporters of the traditional theory and the institutional models, with each side offering empirical evidence to contradict the assumptions or prediction of the other ¹.

The supporters of the traditional theory argue that wage differentials wake workers move to areas, occupations, or industries where wages are

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¹ Among others see, S. Rottenberg, R. J. Lampman, L. G. Reynolds, C. A. Myers, R. L. Raimon, R. L. Bunting. For a review of the mobility literature see H. S. Parnes.

higher, and in this way perform the function of allocating the supply of labor where it is needed most. In view of the persistence of wage differentials for the same skills, more refined formulations of the theory refer to net advantage differentials rather than to wage differentials alone.

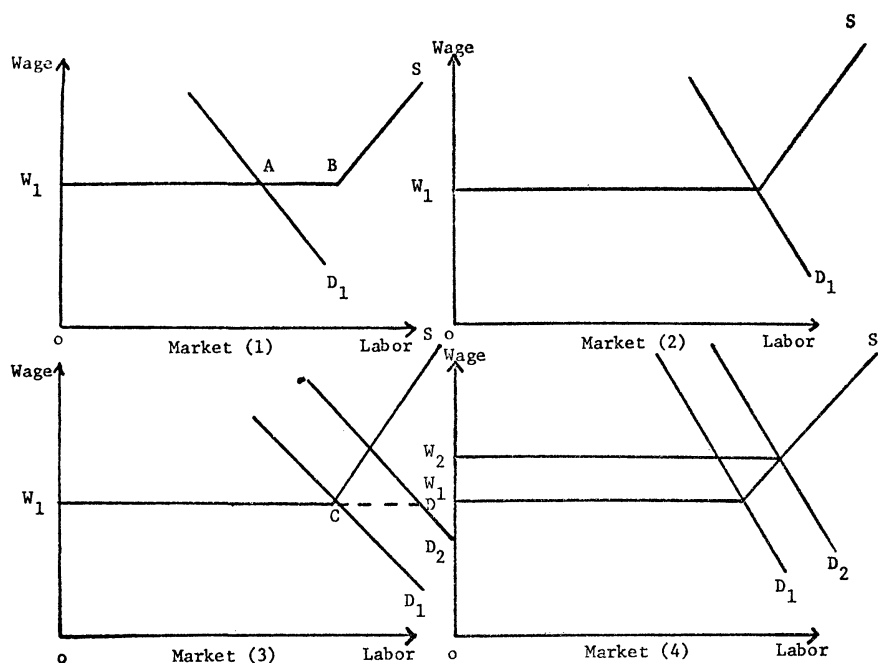
The supporters of the institutional models question the ability of wages to allocate labor and argue that workers want security and do not change jobs in response to wage differentials. The institutionalists feel that the majority of workers once they find what they consider a « good », « fair » or « reasonable » job, remain with their employer and do not look for better opportunities elsewhere. Thus in an economic sense workers do not act rationally. They move only when they are laid off, and in this case they will be attracted to an area, occupation, or industry where there are jobs available rather than to where wages are higher. The supporters of the institutional models believe that the main factor behind the decisions of workers to move is job vacancies rather than wage differentials, thus advocating the so-called job vacancy hypothesis.

An intermediate approach has now been taken by many labor economists, supporters of a modified neoclassical model, who believe that the neoclassical theory can explain the movements of workers in full employment situations while the institutional models and the job vacancy hypothesis can better explain worker movements in situations of less than full employment². However it is possible to resolve many of the difficulties of the above controversy by considering movement from one area, occupation, or industry to another as an investment in human capital, requiring the incurrence of a certain cost and making possible certain returns, which are subject to various degrees of risk and uncertainty.

The graphs below present in a simplified way some possible situations with respect to the level of employment and wages in a particular labor market (geographical, occupational, or industrial).

In all situations we assume a Keynesian supply of labor curve which is horizontal at the existing wage rate up to a point, where it starts sloping upwards. Graph (1) presents a situation of unemployment which is equal to AB. Graph (2) shows a situation of equilibrium at full employment. Graph (3) shows a situation of disequilibrium with excess demand equal to CD. The demand curve shifted from D_1 to D_2 and for some reason the wage rate did not adjust upward. Graph (4) shows a situation where there was a shift in the demand curve and an upward

² See L. Ulman and G. E. Johnson.



adjustment of the wage rate. Assuming that these are four different labor markets, we can use either the neoclassical theory or the job vacancy hypothesis to predict the adjustments that will occur in these markets. Disregarding non-pecuniary considerations and impediments to movement, on the basis of the neoclassical theory, we would expect workers to start moving from markets (1), (2), and (3) to market (4) until the wage rate became the same in all four markets. On the basis of the job vacancy hypothesis we would expect workers to move only from place (1), where there is unemployment, to place (3), where there is excess demand and job vacancies. Although wages are higher in market (4), workers will not move in that direction. In this way market (4) will continue to have higher wages and, according to the proponents of the job vacancy hypothesis, this to a great extent explains the geographical, occupational, and industrial wage differentials existing in the United States.

The neoclassical theory would require workers to move to labor markets where wages are higher, in this way eliminating spatial, occupational, or industrial wage differentials for comparable jobs. On the other hand, the job vacancy hypothesis would predict the possible existence of wage differentials and movement mainly of the unemployed workers

to markets with job vacancies. The neoclassical theory suggests that the mobility of workers is wage-oriented, while the vacancy hypothesis suggests that it is job-oriented. Using an investment-in-human-capital model, we can see that both hypotheses can be useful and are equally important in explaining the behavior of workers with respect to geographical, occupational, and industrial mobility.

The movement of labor from one area, occupation, or industry to another can be considered as an investment in human capital. In deciding whether to move, a worker must decide, consciously or subconsciously, whether it is a profitable investment. The costs and benefits of a move are both economic and psychic. As the psychic costs and benefits vary with each individual, and are difficult to either identify or quantify, we can consider only those costs and benefits of moving which are economic. In this respect we can extend Gary Becker's model concerning investment in on-the-job training to cover investment in moving from one area, occupation, or industry to another, attempting to see what economic factors are considered in the individual decision to move.

According to Becker, a person's decision to invest in himself will depend, as will any other investment decision, on the rate of return of that particular investment. Assuming for simplicity that the cost of investment is incurred once and for all³, the rate of return can be estimated on the basis of the following formula :

(1)

$$C = \frac{R_1}{(1+r)} + \frac{R_2}{(1+r)^2} + \dots + \frac{R_n}{(1+r)^n}$$

where :

C = Private direct and indirect cost of a particular investment in human capital

$R_1, R_2, R_3, \dots, R_n$ = Private returns or increments to the earnings stream, made possible by that particular investment.

r = Rate of return

³ If we make the more realistic assumption that the costs of moving are incurred at n different points of time, then instead of C in formula (1) and (2) we would have to take the present value of future costs. In such a case :

$$C = \sum_{i=1}^n \frac{C_i}{(1+r)^i} \quad \text{or} \quad C = \sum_{i=1}^n \frac{C_i}{(1+r)^i(1+u_i)}$$

In using the above formula to explain mobility decisions, we can modify it, by allowing for risk and uncertainty as follows :

(2)

$$C = \frac{R_1}{(1+r)(1+u_1)} + \frac{R_2}{(1+r)^2(1+u_2)} + \dots + \frac{R_n}{(1+r)^n(1+u_n)}$$

or

(3)

$$C = \sum_{i=1}^n \frac{R_i}{(1+r)^i(1+u_i)}$$

where u_i is used as a discounting factor allowing for risk and uncertainty connected with expected returns from a move in period i .

Disregarding the psychic costs and benefits of a move, the higher the rate of return on the investment in moving, the more willing a rational individual will be to search a better economic opportunity through mobility⁴. As shown above, the rate of return to a move is a function of the cost of moving, the expected earnings differentials, and the uncertainty and risk associated with employment conditions in the area, occupation, or industry of destination.

On the basis of these considerations it is easy to show that the factors deemed relevant by both the neoclassical and the institutional models, are equally important in explaining the mobility of labor. In deciding whether to move, workers will be attracted by wage differentials (R_1, R_2, \dots, R_n [formula (2) or (3)]) but these will have to be discounted by an uncertainty factor (u_i) reflecting the probability of neither finding nor being able to hold for long a job at the higher wage rate. Job vacancies will reduce uncertainty (u_i), thus increasing the rate of return on the investment in the move and making movement more profitable. In full employment situations the uncertainty factor (u_i) will be small and wage differentials will have a strong effect on the decisions of workers to move. In situations of less than full employment

⁴ Viewed from another angle, the incentive to move will depend on the magnitude of the net expected return from the move, which is the difference between the present value of future returns and the cost of the move. In symbolic terms

$$V = \sum_{i=1}^n \frac{R}{(1+r)^i(1+u)^i} - C$$

where V = The present value of the net return from the move and R, r, u , as above.

the risk and uncertainty will be high and the availability of jobs will be the main force behind the redistribution of labor among different areas, occupations, or industries. For unemployed workers the wage differentials expected after a move to another area, occupation, or industry where there are job vacancies will be relatively high, particularly after the expiration of unemployment benefits. Thus unemployed workers will have a higher incentive to move; this explains the empirical finding that workers move more when they lose their jobs than when they are employed. Employed workers have to discount expected higher wages by a risk and uncertainty factor — which during periods of high unemployment will be large — and may find that a particular move is not economically justified although wages are higher in another labor market. This explains why the voluntary movement of workers is very small when there is a high level of unemployment in the country. Even if the estimated rate of return is high, a lack of immediate funds may prevent a worker's move. All these factors can explain persistent spatial, occupational, and industrial differentials in both wages and rates of unemployment.

An area, occupation, or industry paying higher wages may not attract workers from low-wage areas, occupations, or industries respectively if the risk of not finding a job, or not being able to hold it for long, is considered high, or if the move cannot be financed. Moreover, wage differentials particularly geographic differentials will not be eliminated if prospective movers can find other investments, either in physical or human capital, which can yield a higher rate of return. It is thus not surprising that the movement of workers does not eliminate spatial, occupational, or industrial wage differentials. In the same way, the movement of workers cannot be expected to eliminate differentials in the unemployment rates in different occupations, industries, and particularly areas. The unemployed are least able to afford the cost of moving, especially in the case of geographical movement where there is some distance involved.

Both the traditional theory and the job vacancy hypothesis present an incomplete picture of the factors affecting the mobility of labor. The so-called modified neoclassical model recognizes the relevance of both the traditional theory and institutional models and advocates that the former applies to full employment situations while the latter applies to situations of less than full employment; but it does not explain why we have to use two different theories to explain the movement of labor under different conditions. The advantage of the model presented in this paper is that it provides a unified economic explanation of mobility covering both full-and-less-than-full-employment situations.

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LA MOBILITÉ DU TRAVAIL VUE SOUS LA FORME D'UN INVESTISSEMENT

Le but de cet article est d'expliquer les facteurs économiques sous-jacents à la mobilité du travail, qu'elle soit géographique, professionnelle ou industrielle. Il vise à résoudre certaines des difficultés soulevées par la controverse entre les tenants de la théorie traditionnelle et ceux de l'institutionnalisation de la mobilité en considérant les déplacements d'une région, d'une profession ou d'une industrie à l'autre en tant qu'investissement en capital humain, ce qui comporte l'engagement de certaines dépenses et rend possible certains profits qui sont exposés, à des degrés divers, au risque et à l'incertitude.

En prenant la décision de se déplacer, le travailleur doit décider, lucidement ou inconsciemment, s'il fait un placement qui lui profitera. Sa décision de jouer de sa personne dépendra, comme toute décision d'investir, du taux de profit qu'il escompte en retirer. Sans tenir compte des inconvénients et des avantages psychologiques d'une mutation, il est certain que plus celle-ci comportera d'avantages économiques, plus un homme raisonnable sera enclin à se déplacer. Le taux de profit dans une mutation est le rapport qui existe entre le coût du déplacement, la majoration de salaire qu'on espère obtenir et le risque et les aléas liés aux conditions d'emploi dans la région, le métier ou l'industrie dans laquelle on s'engage. À partir de ces considérations, il est facile de démontrer que les facteurs jugés pertinents, tant selon les étalons néoclassiques qu'institutionnels sont également importants pour expliquer la mobilité du travail. En décidant de se déplacer, le travailleur est attiré par des taux de salaire plus élevés, mais ceux-ci sont hypothéqués de certains risques et de certaines incertitudes qui se reflètent dans le danger plus ou moins grand de ne pas trouver d'emploi ou d'être incapable de garder longtemps un emploi plus rémunérateur. Le nombre d'emplois vacants aura pour effet de diminuer les risques, donc d'accroître le taux de profit de l'investissement fait dans une mutation et, par conséquent, de rendre celle-ci plus avantageuse.

Dans un contexte dit de plein emploi, le facteur incertitude sera faible et les meilleurs taux de salaire pèseront lourd dans la décision du travailleur de se déplacer. Au contraire, lorsque le plein emploi n'y existe pas, l'incertitude et le risque seront forts et la disponibilité d'emplois sera le moteur principal de la redistribution de la main-d'oeuvre entre les diverses régions, professions et industries. Pour les sans-travail, le salaire qu'on s'attend d'obtenir par la mutation dans une région, une profession ou une industrie où il y a des emplois vacants sera plutôt fort, surtout si les prestations d'assurance-chômage sont épuisées. Donc, le travailleur en chômage sera-t-il plus enclin à la mobilité, ce qui explique la constatation empirique selon laquelle les travailleurs se déplacent davantage lorsqu'ils perdent leur emploi que lorsqu'ils sont au travail. Pour le travailleur qui détient un emploi, il lui faut, au contraire, défalquer des améliorations de salaire qu'il espère obtenir le poids du facteur risque et incertitude, toujours fort en période de plein emploi, et ainsi se rendre compte qu'un déplacement donné ne se justifie pas économiquement, même si les salaires sont plus élevés sur un autre marché du travail. C'est pourquoi le taux de mobilité volontaire des travailleurs est très bas, lorsqu'il y a plein emploi dans un pays. Même si l'appât des taux de salaire plus élevés qu'on peut obtenir est fort, il se peut que le manque de fonds dans l'immédiat puisse faire obstacle à la mobilité des travailleurs. Cet ensemble d'éléments peut expliquer la persistance des écarts d'une région, d'une profession ou d'une industrie à l'autre en matière de taux de salaire et de niveau de chômage.